

TEST DATA OF WMA100F-48

Regulated DC Power Supply
October 31, 2023

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Design Manager

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Design Engineer

COSEL CO.,LTD.

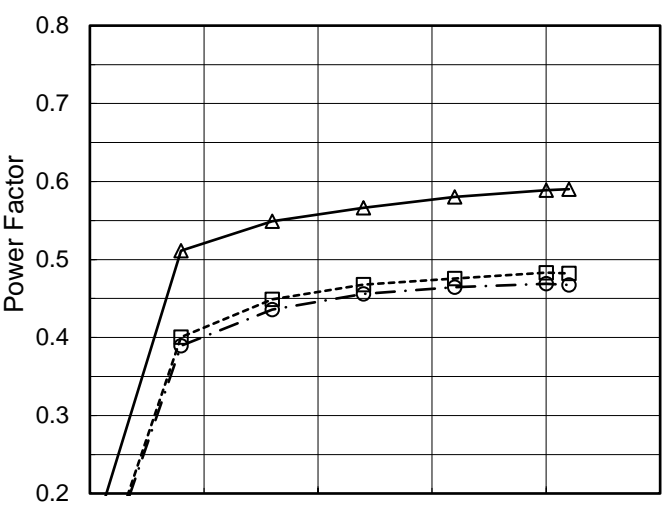
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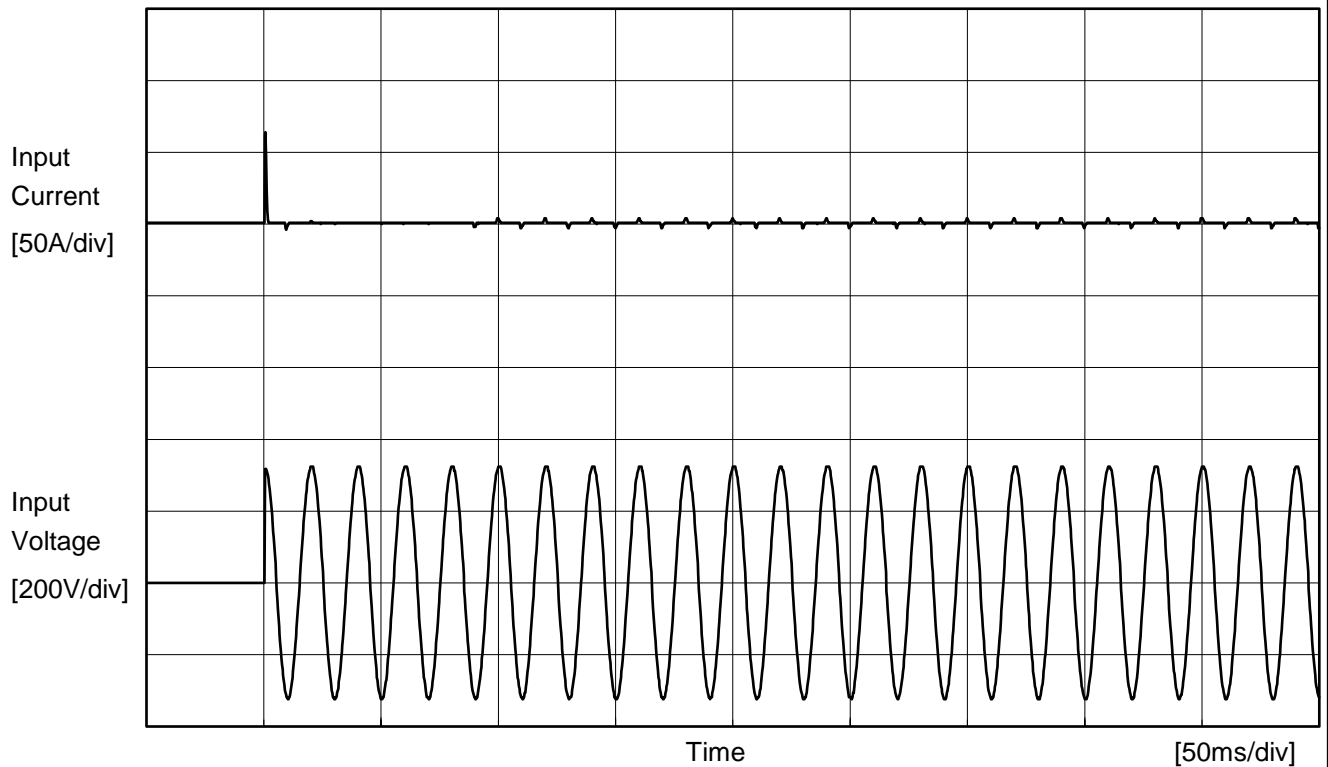
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Model		WMA100F-48		Temperature Testing Circuitry	25°C Figure A																																																			
Item		Efficiency (by Load Current)																																																						
Object		+48V2.1A																																																						
1.Graph		<div><div><div>—△—</div><div>---□---</div><div>---○---</div></div><div><div>Input Volt. 115V</div><div>Input Volt. 230V</div><div>Input Volt. 264V</div></div></div> <div><div>Efficiency [%]</div><div><div>100</div><div>90</div><div>80</div><div>70</div><div>60</div><div>50</div><div>40</div><div>30</div></div><div><div>0.0</div><div>1.0</div><div>2.0</div></div><div>Load Current [A]</div></div>		2.Values																																																				
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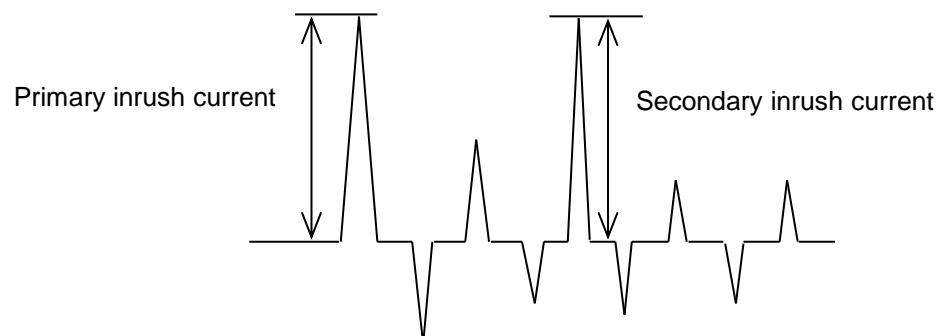
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Model		WMA100F-48	Temperature 25°C Testing Circuitry Figure A
Item		Inrush Current	
Object		+48V2.1A	



Input Voltage 230 V
Frequency 50 Hz
Load 100 %

Primary inrush current 63.5 A
Secondary inrush current 3.5 A



		Temperature 25°C Testing Circuitry Figure C
Model	WMA100F-48	
Item	Leakage Current	
Object	+48V2.1A	

1.Results

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			115 [V]	240 [V]	264 [V]	
IEC60601-1	Figure C-1	Both phases	0.14	0.31	0.34	Operation
		One of phases	0.22	0.50	0.56	Stand by
IEC62368-1	Figure C-2	Both phases	0.14	0.32	0.35	Operation
		One of phases	0.22	0.51	0.57	Stand by
	Figure C-3	Both phases	0.14	0.31	0.35	Operation
		One of phases	0.22	0.50	0.56	Stand by

The value for "One of phases" is the reference value only.

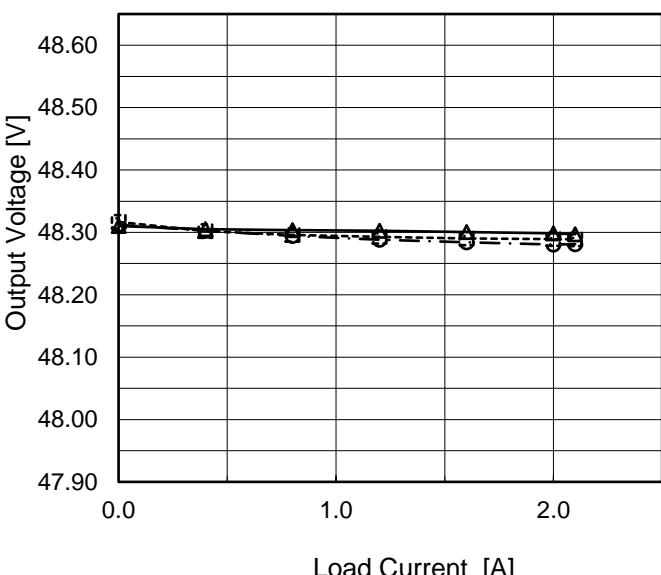
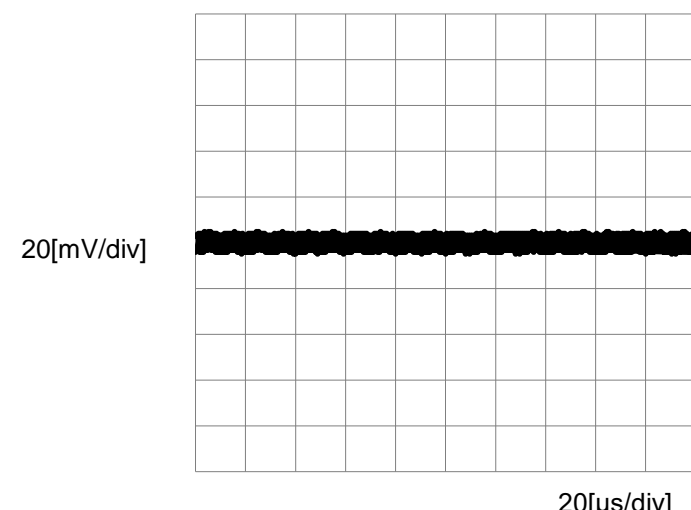
2.Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.



Model		WMA100F-48	Temperature25°C Testing CircuitryFigure A																															
Item		Line Regulation																																
Object		+48V2.1A																																
1.Graph			2.Values																															
<div><div><div>-----□----- Load 50%</div><div>-----△----- Load 100%</div></div><div>Output Voltage [V]</div><div>Input Voltage [V]</div></div>																																		
<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>85</td><td>48.299</td><td>-</td></tr><tr><td>100</td><td>48.301</td><td>-</td></tr><tr><td>115</td><td>48.300</td><td>48.295</td></tr><tr><td>200</td><td>48.294</td><td>48.293</td></tr><tr><td>230</td><td>48.289</td><td>48.288</td></tr><tr><td>240</td><td>48.287</td><td>48.286</td></tr><tr><td>264</td><td>48.283</td><td>48.281</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>			Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	85	48.299	-	100	48.301	-	115	48.300	48.295	200	48.294	48.293	230	48.289	48.288	240	48.287	48.286	264	48.283	48.281	--	-	-	--	-	-
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Item	Ripple-Noise	Temperature 25°C																																																				
Object	+48V2.1A	Testing Circuitry Figure B																																																				
1.Graph																																																						
<div><div>Input Voltage</div><div>230V</div></div> <div><div>Load</div><div>100%</div></div> 																																																						

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BC-11952

Model	WMA100F-48	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+48V2.1A		

Input Volt. 230 V
Cycle 1000 ms

$t_1, t_2 = 50 \mu s$



Min.Load (0A) ←→
Load 100% (2.1A)

200 mV/div

20 ms/div

20 ms/div

Load 0% (0A) ←→
Load 50% (1.05A)

200 mV/div

20 ms/div

20 ms/div

Load 50% (1.05A) ←→
Load 100% (2.1A)

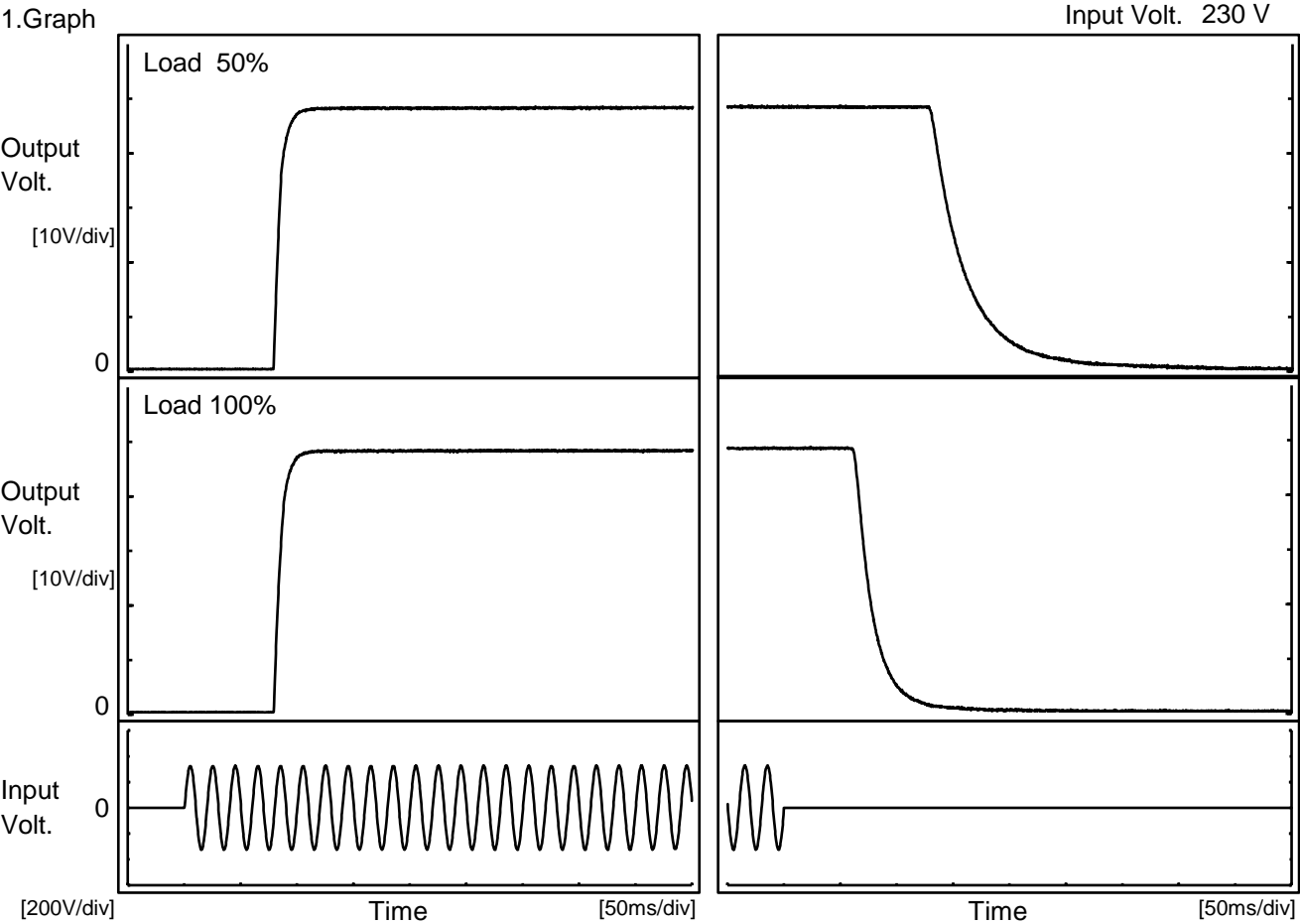
200 mV/div

20 ms/div

20 ms/div

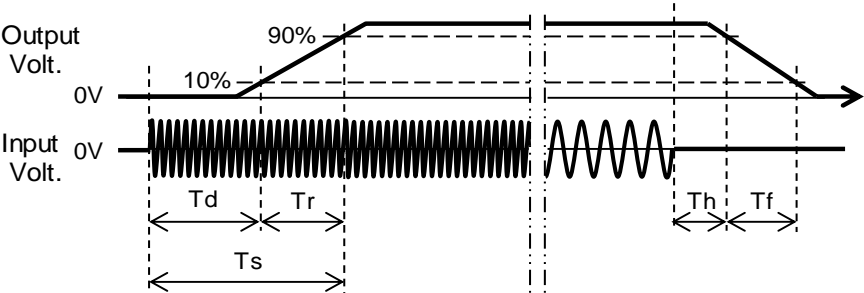
Model		WMA100F-48	Temperature 25°C Testing Circuitry Figure A
Item		Rise and Fall Time	
Object		+48V2.1A	

1.Graph



2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		80.0	11.5	91.5	133.5	69.0
100 %		80.0	12.3	92.3	64.5	35.3



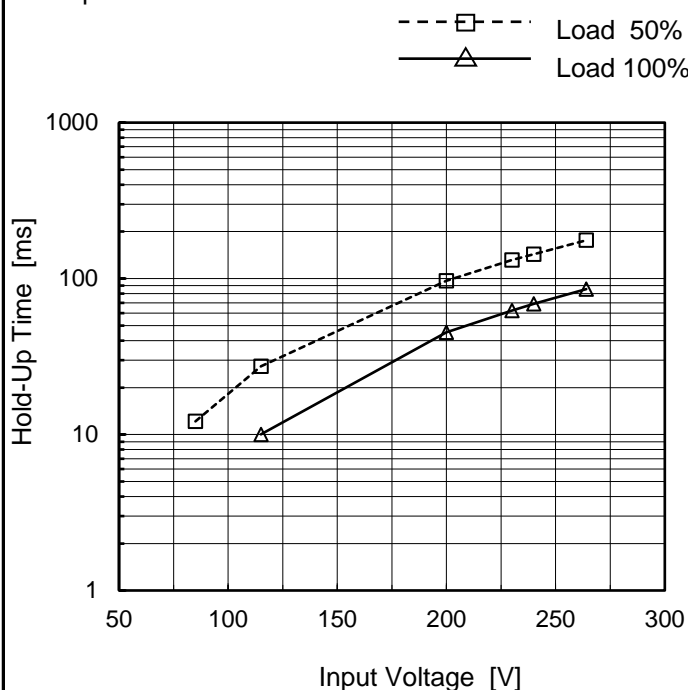
Model WMA100F-48

Item Hold-Up Time

Object +48V2.1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

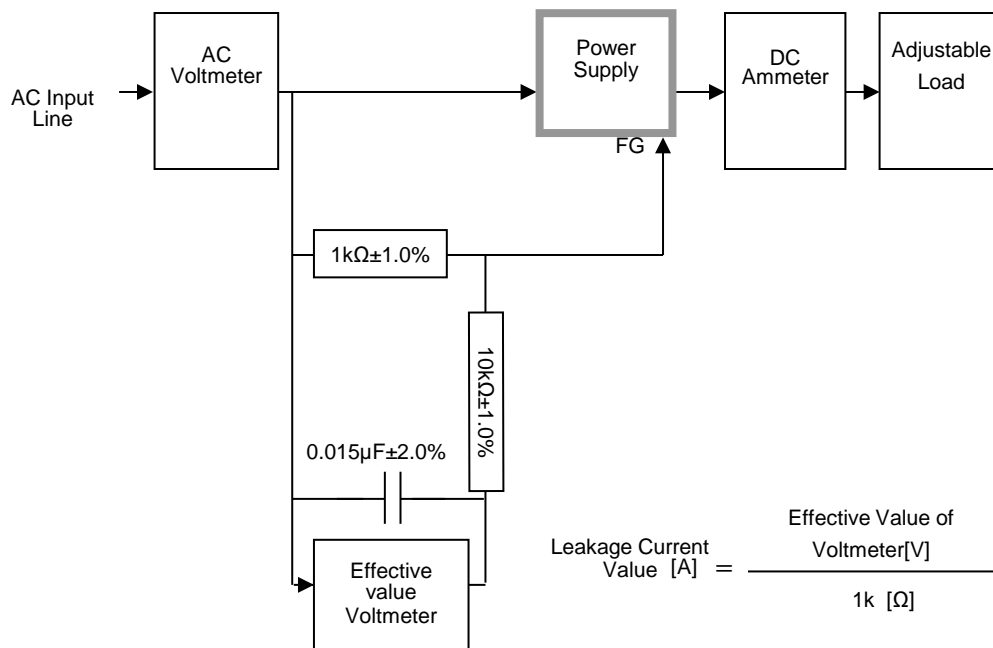
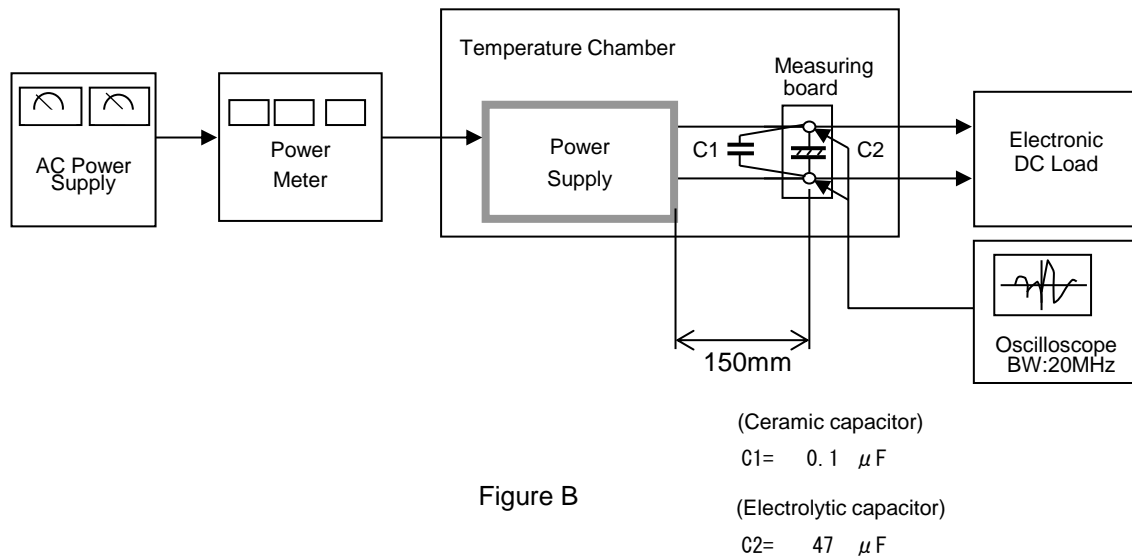
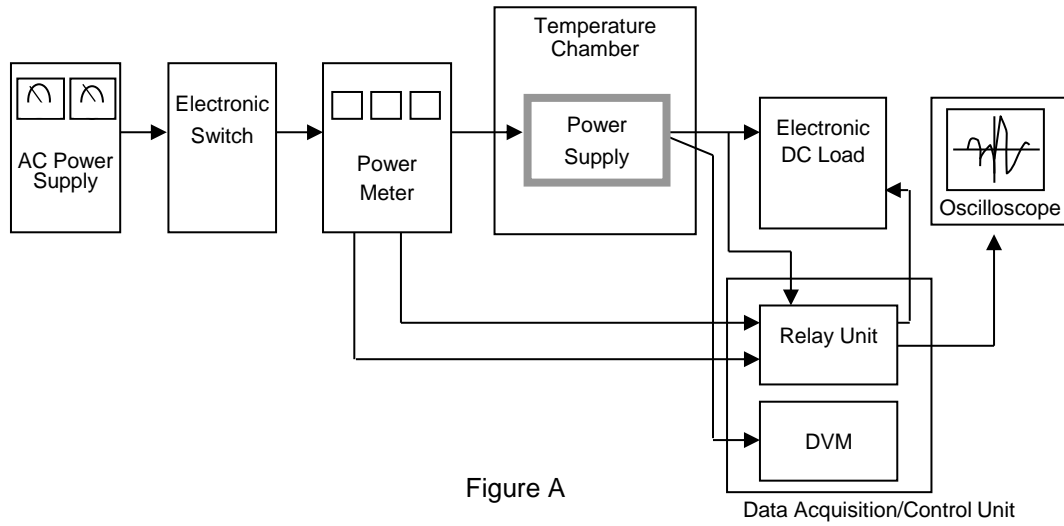
2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	12	-
100	19	-
115	27	10
200	97	45
230	131	63
240	144	69
264	176	86
--	-	-
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Model		WMA100F-48		Temperature 25°C Testing Circuitry Figure A																																																				
Item		Instantaneous Interruption Compensation																																																						
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1.Graph		<div><div>—△—</div>Input Volt. 115V</div> <div><div>- -□- -</div>Input Volt. 230V</div> <div><div>- ·○· -</div>Input Volt. 264V</div> <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p>		2.Values																																																				
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		Testing Circuitry Figure A	
Model	WMA100F-48		
Item	Ambient Temperature Drift		
Object	+48V2.1A		
1.Values Load 100%			
Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V
-20	48.189	48.174	48.166
25	48.205	48.200	48.191
50	48.237	48.232	48.225
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A	
Object	+48V2.1A		
1.Values			
Ambient Temperature[°C]	Input Voltage [V]		
	Load 50%	Load 100%	
-20	45	76	
25	44	75	
50	44	75	
Item	Overvoltage Protection	Testing Circuitry Figure A	
Object	+48V2.1A		
1.Values Load 0%			
Ambient Temperature[°C]	Operating Point [V]		
	Input Volt. 115V	Input Volt. 264V	
-20	58.82	58.73	
25	60.57	60.50	
50	61.77	61.81	



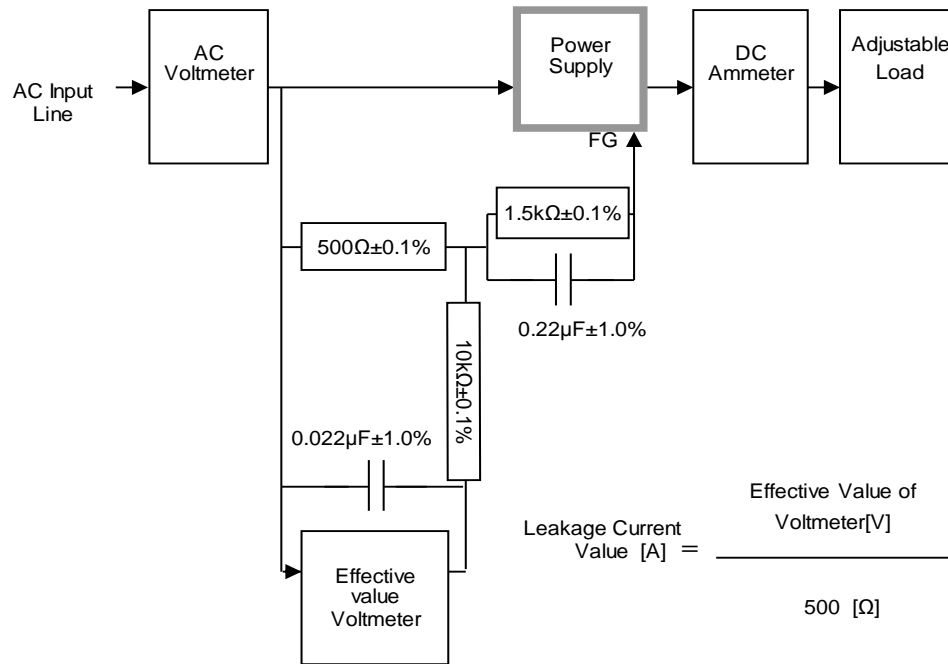


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

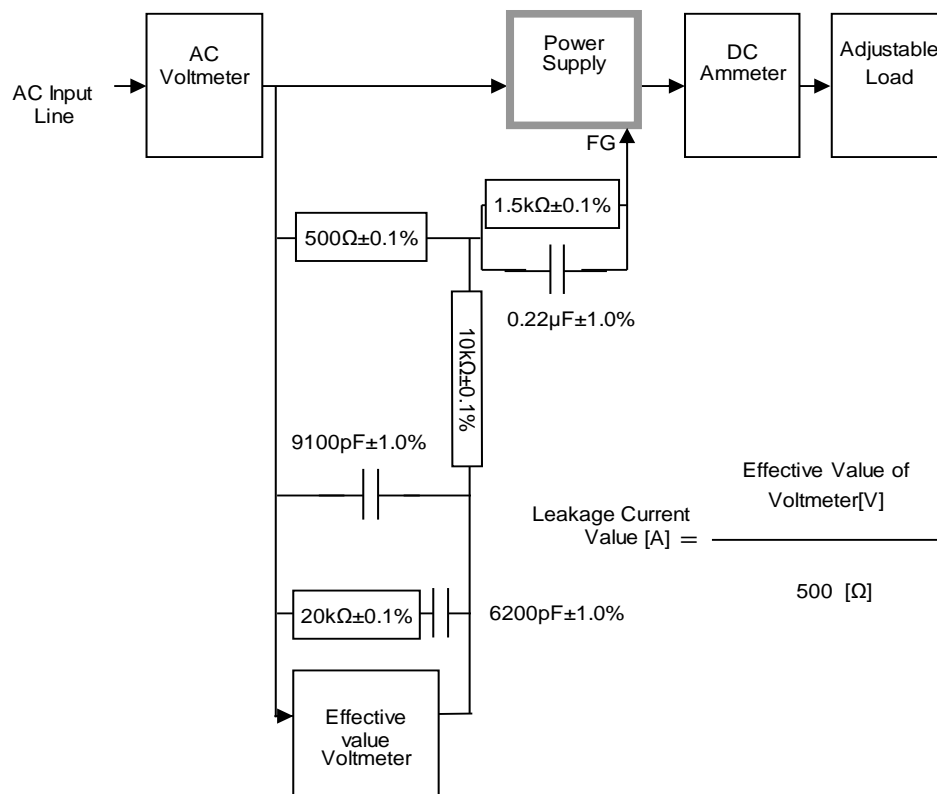


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)